GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA

STARRED QUESTION NO:154
ANSWERED ON:04.05.2016
Heat Wave
Gupta Shri Sudheer;Kirtikar Shri Gajanan Chandrakant

Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether various parts of the country are experiencing severe heat wave conditions during the summer and if so, the details thereof including the States most affected by the severe heat wave along with the reasons therefor;

(b) whether the Government has conducted or proposes to conduct a detailed scientific study on the "heat wave" phenomenon in various parts of the country and if so, the details thereof;

(c) whether the Government has also assessed the impact of intensive heat wave on human beings as well as flora and fauna of the country and if so, the details thereof; and

(d) the remedial measures taken/ proposed to be taken by the Government to address the issue?

Answer

THE MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(DR. HARSH VARDHAN)

(a)to (d): A Statement is laid on the Table of the House.

STATEMENT LAID ON THE TABLE OF THE LOK SABHA IN REPLY (a) to (d) TO STARRED QUESTION NO. *154 REGARDING "Heat Waves" TO BE ANSWERED ON WEDNESDAY, May 04, 2016.

(a) Yes Madam. Every year India experiences severe heat waves in summer, but in the year 2016 during March-April, the most affected states include Odisha, Jharkhand, Gangetic West Bengal, Bihar, Telangana, Andhra Pradesh, Tamil Nadu and Karnataka on many days and Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan, Madhya Pradesh and Gujarat on some days. Date-wise details are given in Annexure-I.

The reason for severe heat wave during this summer was the El-Nino effect, warm sea surface temperature over the pacific ocean and other oceanic basins including the Indian Ocean which had an impact on the Global atmospheric circulation pattern as well. The winds blowing over the Indian sub-continent are warm & dry. During the current season, the southern peninsular India as well as the coastal belt of India was under the influence of continental dry air, which normally have the Maritime influence and thus experience moderate temperatures. A deficient southwest monsoon of past year also has contributed to this situation, in terms of depleted soil moisture, dry and parched land surface & water bodies and less vegetation, which in turn resulting in less & less moisture content from evapo-transpiration.

(b) Using daily maximum temperature data of 103 stations uniformly distributed over the country for the period 1961-2010 from the Indian main land during the hot weather season (March to July) for the last 50 years (1961-2010), various statistical aspects of heat waves (HWs) and severe heat waves (SHWs) such as long term climatology, decadal variation, and long term trends were examined. It was observed that many areas of the country (north, northwest, central and northeast Peninsula) have experienced HW days of =8 HW days on an average per season. The SHW were mainly experienced over north, northwest and central parts of the country. Compared to previous four decades, there was noticeable increase in the HW/SHW days over the country during the recent decade 2001-2010, which is also the warmest decade for the country as well as for the globe.

(c) Limited studies suggest that heat wave conditions lead to exhaustion and is considered by experts to be the forerunner of heat stroke with the difference being that the neurologic function remains intact. Heat exhaustion is marked by excessive dehydration and electrolyte (sodium and potassium salts depletion / imbalance). Symptoms may include diarrhea, headache, nausea and vomiting, dizziness etc. Definitive therapy includes removing patients from the heat and replenishing their fluids. There is an urgent need to quantify much of the subjective and intuitive information that has been published on climate/mortality relationships. Heat wave conditions forces wild life fauna, particularly mammals, birds and reptiles, to shift from their habitats to places in the vicinity of water bodies unable to bear the scorching heat.

(d) Upon prediction of the heat wave conditions by the India Meteorological Department (IMD), various state Governments have a system of giving wide publicity of Dos and Don'ts through advertisements in TV channels, News Papers and opening drinking water camps at identified places in rural and urban areas to mitigate the impact of heat waves. The schedule of National Rural Employment Guarantee Scheme workers is adjusted to avoid exposure to extreme hot weather duration periods. Advisories include precautionary measures to avoid heat stroke include − drinking plenty of water; avoiding going out in open heat during 10AM-4PM; wearing light

colored clothes; covering head/using umbrella while going out; monitoring symptoms of heat stroke etc.